



**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Jun YAMAGUCHI et al.

Group Art Unit: 2841

Application No.: 10/611,547

Examiner: D. LEVI

Filed: July 2, 2003

Docket No.: 116428

For: METHOD FOR WATERPROOFING POWER CIRCUIT SECTION AND POWER  
MODULE

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

A Notice of Appeal and a Petition for Extension of Time are attached. Applicants respectfully request review of the Final Rejection mailed on December 2, 2005, in the above-identified application in light of the following remarks.

Applicants filed a Request for Reconsideration After Final Rejection ("Request") on February 2, 2006. An Advisory Action was mailed on February 22, 2006. There were no claim amendments included in the February 2 Request. The Advisory Action indicated differently and further indicated that the Request was not considered to place the application in condition for allowance.

Applicants' arguments traversing the prior art rejections of the December 2 Office Action are summarized as follows. The Office Action fails to indicate how U.S. Patent No. 6,560,115 to Wakabayashi et al. (hereinafter "Wakabayashi") can reasonably be considered to render obvious the subject matter of the pending claims because the Office Action: (1) mixes

references to specific elements disclosed in the invention and the admitted prior art of Wakabayashi for what they are alleged to suggest, individually and in combination, regarding the subject matter of the pending claims; (2) ignores specific references to removal of seal members in the Wakabayashi invention; and (3) provides inadequate objective evidence of a suggestion motivation or teaching in the prior art regarding inclusion of the seal member, particularly where any alleged benefit from the inclusion of a seal member is otherwise met by the structure of the disclosed invention.

**I. Wakabayashi Does Not Teach All Of The Features The Office Action Alleges**

The Office Action fails in its attempt to map the features disclosed in Wakabayashi to those recited in independent claim 1. The Office Action indicates that the heat radiating member (element 60 of Wakabayashi) is considered to include a circuit arrangement surface having a circuit arrangement region, indicated as element 61. The Office Action asserts that the disclosed module, element 33, a combination of elements 60 and 54, comprises a power circuit section including at least one electronic part arranged in the circuit arrangement region. The Office Action refers to elements 57, 58 and 100 as corresponding to this feature.

Elements 57, 58 and 100 are actually depicted as mounted within the power connector-incorporating casing 54 to which a heat sink 60 is mounted on the lower side, and cannot reasonably be considered to be arranged in a circuit arrangement region, indicated as element 61 in Wakabayashi.

The Office Action, in fact, on page 4, indicates that the bottom portion of the power connector-incorporating casing 54 is interpreted to correspond to an insulating layer disposed between the heat radiating member and the power circuit section. As such, even the Office Action is internally incongruous regarding elements 57, 58 and 100 being arranged in the circuit arrangement region of the heat radiating member. These elements, as indicated above,

are clearly depicted and described as being "mounted within the power-incorporating casing 54" (col. 9, lines 61 and 62).

The Office Action takes an equally strained approach in mapping other of the individual elements disclosed in Wakabayashi to features positively recited in the claims depending from claim 1. For example, features not adequately shown as corresponding to recited claim features include: the hood recited in claim 3; the through-hole communicating a side of the heat radiating member and a side of the hood recited in claim 4; another through-hole communicating the side of the heat radiating member and the recess portion recited in claim 5; a second portion of the bus bar standing up from the circuit arrangement surface and inserted into the hood recited in claim 6; a second groove, a third portion of the bus bar extending through the second groove recited in claim 7; and the feature of wherein the bus bar protrudes from at least one of side edges of the power circuit section in outward directions, as recited in claim 8. None of these individual elements is adequately shown to be suggested by Wakabayashi.

**II. Wakabayashi Cannot Reasonably Be Considered To Suggest Re-Incorporating A Packing As Disclosed In The Prior Art To The Wakabayashi Reference**

Applicants previously asserted that previous Office Actions selectively ignored teachings of the Wakabayashi reference regarding the inclusion of separate seal members. The Final Rejection indicates that "[t]he Examiner has reviewed the Wakabayashi reference and does not see where it teaches away from using the seal," concluding that one would be motivated to use a seal to render certain junctions waterproof and/or shielded from EMI.

The analysis of the Office Action fails because (1) Wakabayashi at least suggests removal of the prior art seal, (2) Wakabayashi specifically teaches another method by which the disclosed invention is waterproof, and (3) Wakabayashi makes no reference to necessary shielding from, for example, EMI.

Wakabayashi specifically states the following:

(1) "And besides, the packing is used between the lid 20 and the casing 2, and also the packing 23 is used between the casing 2 and the heat sink 21, and this increases production costs," (col. 2, lines 20-23). Inclusion of the seals is, therefore, specifically identified as a shortfall in the prior art (see Fig. 15 of Wakabayashi that the disclosed invention is intended to overcome).

(2) "In the invention, the welding portions ... are formed respectively at those portions of the power portion and the control portion which are to be combined together. Therefore, the waterproof effect and the joining can both be effected without the use of a packing or the like," (col. 5, lines 50-56). Again here, Wakabayashi clearly indicates it is the intention of the disclosed invention to do away with any necessity for a "packing or the like."

The Office Action ignores these disclosures in asserting that Wakabayashi suggests inclusion of seals.

**III. The Office Action Fails In Its Attempt To Assert Adequate Teaching, Suggestion, or Motivation In The Prior Art To Combine The Embodiment Disclosed In The Wakabayashi Reference**

The Office Action, on page 6, in support of its conclusion that seals would logically be reintroduced into the Wakabayashi invention states, "Examiner notes that it is old and routine to use a seal anywhere two portions are joined and an airtight or impermeable configuration is desired. In this art, seals are also often used to seal any gaps against the passage of EMI." Regardless that the use of seals may be known to those of ordinary skill in the art, Wakabayashi states, "the power connector-incorporating casing 54 and the heat sink 60 are bonded together by a resin adhesive ... a resin adhesive is filled, and solidified or cured to form a resin layer 102, thereby sealing the power modules 61 and the electrical connection portions 100." Wakabayashi is thus plain in showing that any necessary sealing of the disclosed components is accomplished by use of resin layers and/or welding. Given these

disclosures in Wakabayashi, it is not reasonable to conclude that one of ordinary skill in the art would have been motivated re-introduce seal members in order to provide an effective waterproof seal for the module between the casing and the heat radiating member.

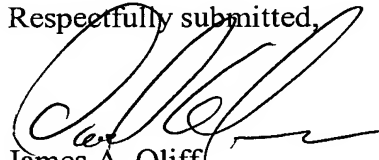
**IV. Conclusion**

For at least the above reasons, Wakabayashi cannot reasonably be considered to have suggested the combinations of all of the features recited in the pending claims.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration of the rejections enumerated in the December 2 Final Rejection is earnestly solicited.

Should the Review Panel believe that anything further would be desirable in order to place this application in even better condition for allowance, the Panel is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,



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JAO:DAT/cfr

Attachment:

Notice of Appeal  
Petition for Extension of Time

Date: March 13, 2006

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